

PATENT ABSTRACTS OF JAPAN

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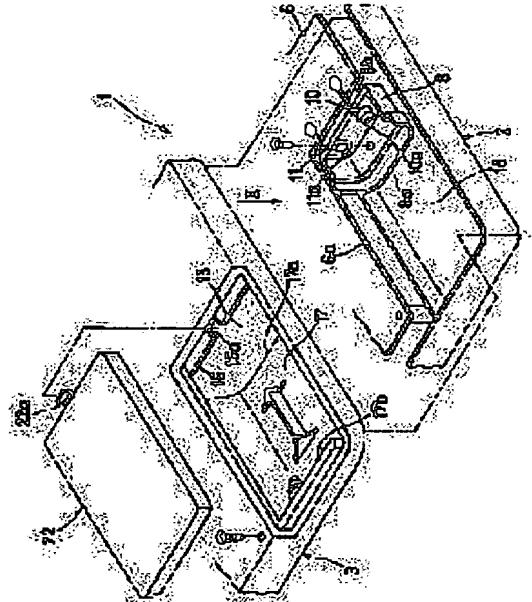
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(54) STORAGE STRUCTURE OF BATTERY

(57)Abstract:

PROBLEM TO BE SOLVED: To reduce liquid amount of a battery entering a printed wiring board and suppress damage of electronic parts.

SOLUTION: Each openings of a upper case 2 and a lower case 3 are bonded to form a case 1. A printed wiring board 6 and a first storage case 8 having terminals 10, 11 at an end surface thereof are fixed with the upper case 2. One end of the terminals 10, 11 faces inside of the case 8, and another end of that are connected with the board 6. A second storage case 17 forming a battery containing part 18 is integrally formed with the case 3. Butt end faces 8a, 17a joining each other are formed in the cases 8, 17.



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CLAIMS

[Claim(s)]

[Claim 1] The housing formed by joining the mutual opening edge of two boxes, and the battery holder which is prepared in this housing and has opening, The lid which opens and closes opening of this battery holder, and the terminal formed with the wire rod which has the conductivity to which it is prepared in said battery holder, and an end contacts the electrode of a cell, In the cell receipt structure which consists of a printed wired board which the other end of this terminal was connected and was attached in one side of said two boxes The 1st receipt case prepared in one [said] box so that said battery holder might be attached in said terminal and a part of longitudinal direction of a cell might be covered, It constitutes from the 2nd receipt case formed in the box of another side at one so that the remaining part of a cell might be covered and between said printed wired boards might be covered. Cell receipt structure characterized by preparing the comparison end face mutually joined by joining said two boxes to these [1st] and the 2nd receipt case.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the cell receipt structure where between the electrode of the cell contained by the battery holder in a housing and the printed wired boards prepared in the housing was connected through the terminal formed with the wire rod which has conductivity.

[0002]

[Description of the Prior Art] In this kind of cell receipt structure, the terminal formed with the wire rod which has conductivity from the demand of a miniaturization and thin-shape-izing is prepared in the battery holder. There are some which were indicated by JP,10-270008,A as this cell receipt structure. What was indicated here consists of an upper case and a lower case, by joining the opening edge of both [these] cases, a housing is formed and the cell receipt case and the printed wired board are prepared in the upper case. A cell receipt case presents the shape of a cross-section abbreviation KO character, and it has opening on the whole surface, and the terminal formed with the wire rod which has conductivity is prepared, the end of this terminal is faced in a cell receipt case, and the electrode of a cell is connected to the end face of this opening. Moreover, the other end is drawn from opening at a printed wired board side, it connects with the terminal area of a printed wired board, and the lid which enables closing motion of this opening is formed in opening of a cell receipt case.

[0003]

[Problem(s) to be Solved by the Invention] However, when doing the activity which connects a terminal to a printed wired board, in order to make the end of a terminal face in a cell receipt case and to derive the other end to a printed wired board, it is necessary to make it open wide with the conventional cell receipt structure mentioned above, so that a member which covers between the opening edge of a cell receipt case and printed wired boards may not be made to intervene. And it has structure which the opening edge of a cell receipt case and the end face of a printed wired board are made to approach. For this reason, when liquid leaked from the cell, this liquid infiltrated into the printed wired board from the clearance between the opening edge of a cell receipt case, and a lid, and there was a problem of spoiling the function of the electronic parts which the circuit was made short-circuiting or were carried. Moreover, since the clearance which can insert foreign matters, such as a driver, was formed between the opening edge of a cell receipt case, and the lower case when a lid was opened, there was a possibility that the electronic parts on a printed wired board might be damaged.

[0004] The place which this invention is made in view of the above-mentioned conventional problem, and is made into the purpose is to offer the cell receipt structure where breakage of electronic parts was suppressed as much as possible while reducing the volume of the cell which infiltrates into a printed wired board.

[0005]

[Means for Solving the Problem] In order to attain this purpose, the cell receipt structure concerning this invention The housing formed by joining the mutual opening edge of two boxes, and the battery holder which is prepared in this housing and has opening, The lid which opens and closes opening of this battery holder, and the terminal formed with the wire rod which has the conductivity to which it is prepared in said battery holder, and an end contacts the electrode of a cell, In the cell receipt structure which consists of a printed wired board which the other end of this terminal was connected and was attached in one side of said two boxes The 1st receipt case prepared in one [said] box so that said battery holder might be attached in said terminal and a part of longitudinal direction of a cell might be covered, It constitutes from the 2nd receipt case formed in the box of another side at one so that the remaining part of a cell may be covered and between said printed wired boards

may be covered, and the comparison end face joined mutually is prepared by joining said two boxes to these [1st] and the 2nd receipt case. Therefore, the amount in which the liquid which leaked from the cell infiltrates into a printed wired board side in the 2nd receipt case is reduced. Moreover, between most battery holders and printed wired boards is covered in the 2nd receipt case.

[0006]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on drawing. For drawing 1 , II view Fig. [in / the cell receipt structure concerning this invention is decomposed, and / in the *** perspective view from a base side and drawing 2 / drawing 1] and drawing 3 are III-III in drawing 2 . A line sectional view and drawing 4 are IV-IV in drawing 2 $R > 2$. It is a line sectional view. In drawing 1 , both the housings in which the whole is shown with a sign 1 become the whole surface from the upper case 2 and the lower case 3 where it has opening, and a housing 1 is formed by concluding each other by *** , as a mutual opening edge is joined.

[0007] As shown in drawing 3 and drawing 4 , the mount 5 is formed in the part corresponding to the battery holder 18 which an upper case 2 mentions later at one. 6 is a printed wired board, it is attached in an upper case 2 so that opening of an upper case 2 may be covered through the stud 7 ($R > \text{drawing 4}$ 4 reference) which protruded on the upper case 2, and rectangle-like notch 6a is prepared in the part corresponding to a battery holder 18.

[0008] 8 is the 1st receipt case, and the stop of it is ***ed and carried out to the mount 5 mentioned above, and it is being fixed to the upper case 2. As opening of the back other than the upper part is carried out and this 1st receipt case 8 shows this open end to drawing 3 , a cross section is formed in the shape of a crank, and forms comparison end-face 8a, and fitting immobilization of the terminal 10 by the side of a negative electrode and the terminal 11 by the side of a positive electrode is carried out in the upper limit side of this comparison end-face 8a and standing wall 8b of the opposite side. Both the terminal 10 by the side of a negative electrode and the terminal 11 by the side of a positive electrode are bent by the right angle, the end face section is connected to a printed wired board 6 by soldering, and the terminal areas 10a and 11a formed in the other end are positioned in the inside of standing wall 8b.

[0009] The rectangle-like opening 15 is drilled in a corner of the lower case 3, the piece 16 of installation protrudes in the front end of this opening 15 horizontally, and notch 16a is prepared in the center of this piece 16 of installation. 17 is the 2nd receipt case, it goes caudad from the lower limit of the both-sides section of opening 15, and is formed in the lower case 3 at one, a cross section presents the shape of an abbreviation KO character, opening of the front side is carried out, comparison end-face 17a is formed and, as for this opening edge, the bridge terminal 19 is attached in back end section 17b. As shown in drawing 2 , positive-electrode terminal area 19a positioned in the end of this bridge terminal 19 so that terminal area 10a of the terminal 10 by the side of the negative electrode mentioned above might be countered is formed, and negative-electrode terminal area 19b positioned so that terminal area 11a of the terminal 11 by the side of the positive electrode mentioned above might be countered is formed in the other end.

[0010] In such a configuration, as shown in drawing 1 , as the 2nd receipt case 17 of the lower case 3 is made to insert in notch 6a of a printed wired board 6, opening of the lower case 3 and opening of an upper case 2 are joined, and both the cases 2 and 3 of each other are concluded according to ***. If both the cases 2 and 3 are concluded, as shown in drawing 2 and drawing 3 , both the abutting surfaces 8a and 17a of the 1st and 2nd receipt cases 8 and 17 will be joined, and the battery holder 18 only the upper part carried out [the battery holder] opening in both [these] the receipt cases 8 and 17 will be formed. In this battery holder 18, it is contained so that two cells 20 and 20 may be held between terminal area 11a of the terminal 11 between terminal area 10a of the terminal 10 by the side of a negative electrode, and positive-electrode terminal area 19a of the bridge terminal 19, and by the side of a positive electrode, and negative-electrode terminal area 19b of the bridge terminal 19. Opening of a battery holder 18 is closed by putting a lid 22 on opening of a battery holder 18, and making piece of elastic engagement 22a of a lid 22 engage with notch 16a of the piece 16 of installation.

[0011] Thus, as the 2nd receipt case 17 formed in one shows the formed battery holder 18 to the lower case 3 at drawing 4 , between printed wired boards 6 is covered. therefore, even if the liquid of a cell 20 to a cell carries out leakage appearance, this liquid will only flow out of the clearance between the upper limit of the 1st receipt case 8, and a lid 22 into a printed wired board 6 side, and will not flow into a printed wired board 6 side out of

the 2nd receipt case 17 which has covered most battery holders 18. For this reason, since the flow by the side of a printed wired board 6 is reduced in the 2nd receipt case 17, the short yield of the circuit on a printed wired board 6 is not only reduced, but the liquid which began to leak from a cell can suppress the fall of the function of the carried electronic parts as much as possible. Moreover, since generating of the clearance which can insert a foreign matter between a battery holder 18 and a printed wired board 6 can be suppressed to the minimum, while being able to prevent destruction of electronic parts as much as possible, it can also be prevented as much as possible that dust and water infiltrate into a printed wired board 6 side.

[0012] In addition, with the gestalt of this operation, although the housing 1 was formed in two cases 2 and 3, the lower case 3 may be formed by the covering device material formed in the shape of flat. Moreover, although the case where two cells 20 were contained to a battery holder 18 was explained, in order to make it contain one piece and to take out the terminal 11 by the side of a positive electrode, and the terminal 10 by the side of a negative electrode from the both ends of a battery holder 18 according to an individual in that case, the 1st two receipt cases 8 are needed. Moreover, when the 1st two cases 8 are needed when you may make it contain three or more cells 20 and it considers as odd pieces, and it considers as even pieces, the 1st case 8 is good at one piece.

[0013]

[Effect of the Invention] As explained above, since the flow by the side of a printed wired board is reduced in the 2nd receipt case, the short yield of the circuit on a printed wired board is not only reduced, but according to this invention, the liquid which began to leak from a cell can suppress the fall of the function of the carried electronic parts as much as possible. Moreover, since generating of the clearance which can insert a foreign matter between a battery holder and a printed wired board can be suppressed to the minimum, while being able to prevent destruction of electronic parts as much as possible, it can also be prevented as much as possible that dust and water infiltrate into a printed wired board side.

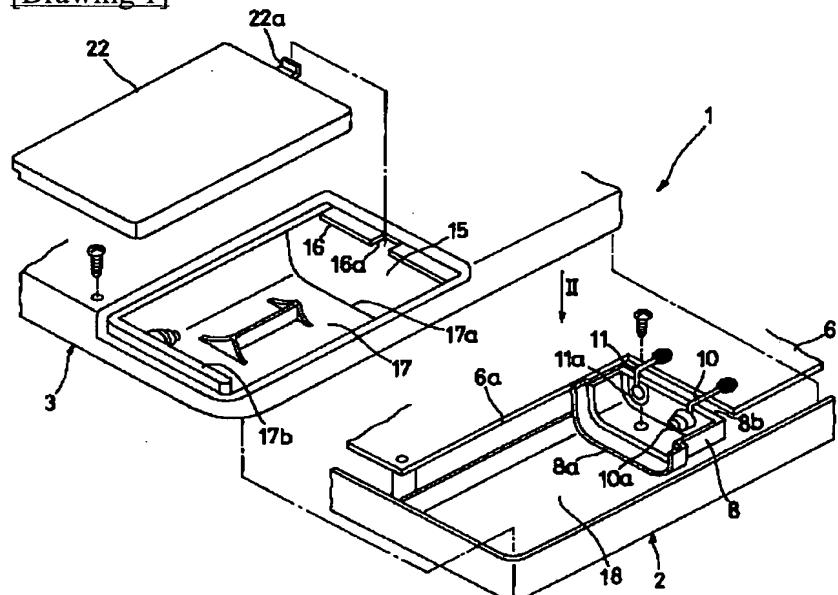
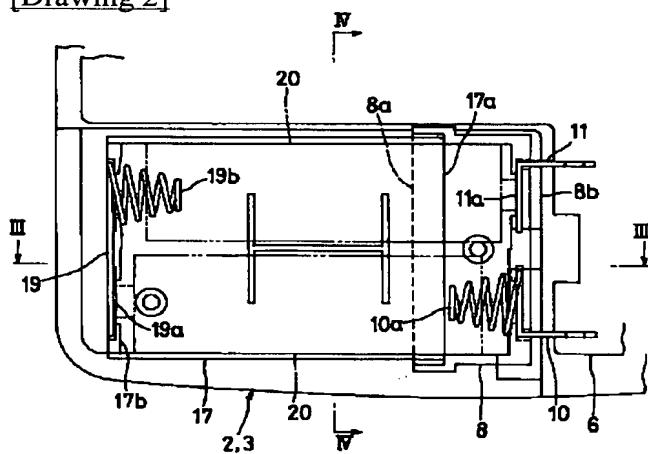
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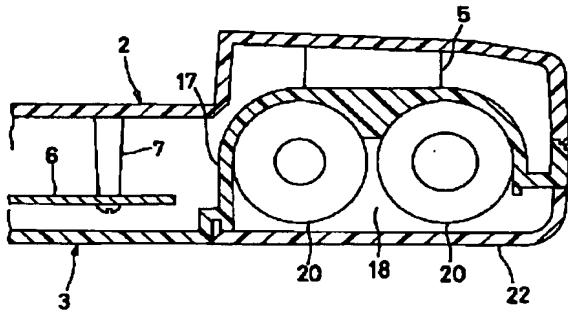
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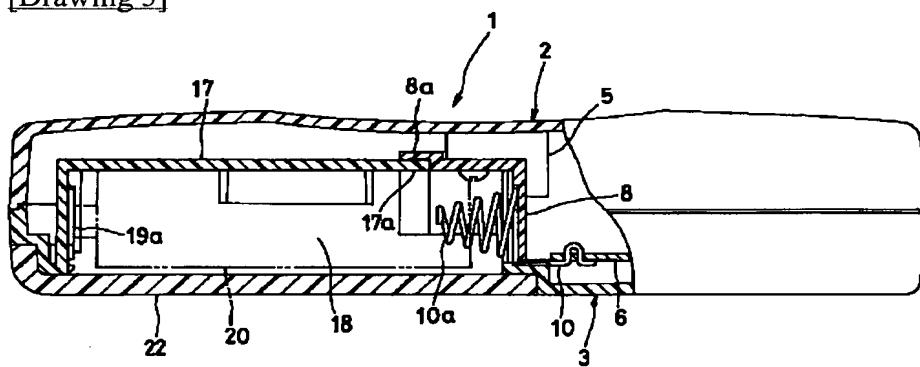
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DRAWINGS

[Drawing 1]**[Drawing 2]****[Drawing 4]**



[Drawing 3]



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